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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,620	10/17/2001	Qian Lin	10006289-1	8581

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EXAMINER	
WHIPKEY, JASON T	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/982,620	LIN ET AL.	
	Examiner	Art Unit	
	Jason T. Whipkey	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *25* is/are allowed.

6)☒ Claim(s) *1-3,5,12-16,18-21 and 23* is/are rejected.

7)☒ Claim(s) *4,6-11,17,22 and 24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 20, 2005, have been fully considered but they are not persuasive.

Regarding claim 1, Applicant argues that "[t]he cited sections of Otani describe a document detecting section that determines whether or not a document 'is placed on the table'. ... By way of contrast, in Applicants' claim 1 combination, the determination is whether or not the scene to be captured is a document" (see page 10, second paragraph). However, these are effectively the same operation.

Since Otani determines whether or not a document is placed on the table, there are two possible statuses for what the document camera 7 is capturing at any given moment: a document or no document. If no document is detected, the scene *is not* a document; it's a table. If a document is detected, the scene *is* a document.

Since Applicant makes the same argument with regard to the other claims, the same reasoning can be applied to them as well.

Claim Objections

2. Claim 8 is objected to because "the method further wherein the comprising" (line 2) is unclear. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Otani (U.S. Patent No. 6,144,403).

Regarding **claims 1 and 15**, Otani discloses a method for capturing images for use in a digital camera (see column 11, lines 57-60) comprising the steps of:

a) receiving a preview of a scene to be captured (see column 6, lines 39-42);

b) automatically determining whether the scene to be captured is a document based on the preview (successive images are captured and compared prior to the usable image capture; see column 6, lines 39-42, and column 7, lines 57-58);

c) when it is determined that the scene is a document, programming at least one camera control for document capture (zoom and focus are adjusted; see column 8, lines 28-35, and column 11, lines 42-44); and

d) capturing the scene with the programmed camera control (see column 8, lines 46-47).

Regarding **claims 2 and 16**, Otani further teaches:

> e) performing image processing tailored for documents on the captured scene (see column 8, line 46, through column 10, line 23).

Regarding **claim 3**, Otani further teaches:

> the preview is a lower resolution version of the scene to be captured (the preview in this case is an overview of the entire document table, while the final image is composed from a number of zoomed-in image tiles; see column 8, lines 28-45).

Regarding **claim 14**, documents inherently include at least one of text, graphics, and images by the very definition of the word.

Regarding **claims 21 and 23**, Otani discloses:

> said step of automatically determining whether the scene to be captured is a document further comprises the step of:
>
> evaluating pixels of said preview of said scene to be captured to determine whether said scene to be captured is a document or whether said scene to be captured is a natural scene (successive images are captured and compared prior to the usable image capture; see column 6, lines 39-42, and column 7, lines 57-58).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani in view of Peulen (U.S. Patent No. 6,222,640).

Claims 5 and 18 may be treated like claims 1 and 15, respectively. However, Otani is silent with regard to detecting a document by classifying every pixel into one of three classes and counting the pixels in each class.

Peulen discloses an imaging device that detects a text document (see column 6, lines 20-23) by:

> classifying every pixel into three classes of pixels; wherein the classes include a text pixel class (the black pixels in a produced histogram are classified as text pixels; see column 6, lines 55-57), a picture pixel class (the gray pixels in the histogram are classified as picture pixels; see column 6, lines 58-62), and a

background pixel class (white pixels in the histogram are assumed to be part of the background; see column 6, lines 55-57);

counting the number of text pixels (pixels are counted using the histogram, wherein the number of each type of pixel is plotted along the ordinate; see column 6, lines 53-55);

determining whether the number of text pixels is in a predetermined relationship with a predetermined percentage of the total pixels (by comparing the pixel types as plotted in the histogram with each other; see column 6, lines 62-66);

when the number of text pixels is in a predetermined relationship with a predetermined percentage of the total pixels, classifying the image as a document (in this case, a text type; see column 6, lines 62-66);

otherwise, when the number of text pixels is not in a predetermined relationship with a predetermined percentage of the total pixels, classifying the image as a non-document (in this case, a photographic type; see column 6, lines 62-66).

An advantage of classifying every pixel in order to determine whether the captured scene is a document is that an image's contrast may be optimized for reproduction while requiring a minimum of processing power. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Otani's camera perform the document/non-document determination described by Peulen.

8. Claims 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani in view of Braica (U.S. Patent Application Publication No. 2002/0097439) and Nako (U.S. Patent No. 5,940,544).

Claims 12 and 19 may be treated like claims 1 and 15, respectively. However, Otani is silent with regard to performing document-specific image processing.

Braica discloses a document image processing system that performs the process of:

identifying edge pixels (see paragraph 36);

sharpening the edge pixels (see paragraph 31); and

darkening the edge pixels (see paragraph 47).

As stated in paragraph 9, an advantage of identifying, sharpening, and darkening the edge pixels is that both photo and text quality are improved with a minimum of pixels adjusted. For this reason, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have Otani's camera identify, sharpen, and darken the edge pixels, as described by Braica.

Braica is silent with regard to performing luminance correction on the image.

Nako discloses a document image processing device that performs the process of:

performing luminance correction on the image (see column 18, lines 26-49).

As stated in column 18, lines 45-49, an advantage of performing such a luminance correction is that unevenly illuminated pixels resulting from subject surface curvature may be compensated for, this resulting in a more realistic representation of the original subject. For this reason, it would have been obvious to one of ordinary skill the art at the time the invention was

made to have Braica's image processor also perform luminance correction, as described by Nako.

9. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani.

Claim 13 may be treated like claim 1. However, Otani is silent with regard to the type of document used.

Official Notice is taken that computers are frequently used to print out documents. An advantage of using a computer to produce a document is that computers produce documents that are more readable and easier to edit than a handwritten document. For this reason, it would have been obvious to one of ordinary skill the art at the time the invention was made to have Otani's system capture documents that are computer printouts.

Claim 20 may be treated like claim 15. Additionally, documents inherently include at least one of text, graphics, and images by the very definition of the word. However, Otani is silent with regard to the type of document used.

Official Notice is taken that computers are frequently used to print out documents. An advantage of using a computer to produce a document is that computers produce documents that are more readable and easier to edit than a handwritten document. For this reason, it would have been obvious to one of ordinary skill the art at the time the invention was made to have Otani's system capture documents that are computer printouts.

Allowable Subject Matter

10. Claims 4, 6-11, 17, 22, and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claims 4 and 16**, no prior art could be located that teaches or fairly suggests a camera that detects whether its subject is a document by dividing a captured image into a plurality of regions, counting the luminance edges in each region, counting the number of regions with more than a predetermined number of luminance edges, and classifying the image as a document if the number of regions counted is greater than another predetermined number.

Regarding **claims 6-8**, no prior art could be located that teaches or fairly suggests a camera that detects whether its subject is a document and disables an automatic flash if it is.

Regarding **claims 9-11**, no prior art could be located that teaches or fairly suggests a camera that detects whether its subject is a document, and if it is, instructs a user to position the camera within a predetermined range of angles with the document while reducing reflections from the document.

Regarding **claims 22 and 24**, no prior art could be located that teaches or fairly suggests optimizing camera settings for a natural scene if the scene to be captured is a natural scene.

11. Claim 25 is allowed.

Regarding **claim 25**, no prior art could be located that teaches or fairly suggests a camera that detects whether its subject is a document is a natural scene based on a digital preview,

wherein camera control is programmed based on whether the subject is a document or a natural scene.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Whipkey, whose telephone number is (571) 272-7321. The examiner can normally be reached Monday through Friday from 9:00 A.M. to 5:30 P.M. eastern daylight time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu, can be reached at (571) 272-7320. The fax phone number for the organization where this application is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JTW

JTW
December 21, 2005

TUAN HO
PRIMARY EXAMINER